REMARKS

Claims 1, 2, 4, and 5 are now pending in the application. Claims 7-9 and 11-13 are cancelled by this amendment. No claims are currently amended or newly added by this amendment. The Examiner is respectfully requested to reconsider and withdraw the rejections in view of the amendments and remarks contained herein.

REJECTION UNDER 35 U.S.C. § 103

Claims 7-9 and 11-13 stand rejected under 35 U.S.C. § 103(a) as being unpatentable over Shanks (U.S. Pat. Pub. No. 2002/0152044; "Shanks"). Claims 7-9 and 11-13 have been cancelled from the application, thereby rendering this rejection moot.

Claims 1, 2, 4, and 5 stand rejected under 35 U.S.C. § 103(a) as being unpatentable over Ng (U.S. Pat. Pub. No. 2003/0011474; "Ng") in view of Kem (U.S. Pat. No. 5,058,141; "Kem") and Muirhead (U.S. Pat. Pub. No. 2002/0030597; "Muirhead"). This rejection is respectfully traversed.

Regarding claim 1, the Examiner states that Ng discloses "a first waveform which corresponds to one of code '0' or '1' ... (Logic '1' of FIG. 8)", "a second waveform which corresponds to one of code '0' or '1' opposite to the first waveform ... (Logic '0' of FIG. 8)" and "a third waveform (logic 'SYN' of Fig. 8)."

Kem describes that:

> When reset and control logic 101 is enabled (ENABLE=1), it begins sampling the serial input data. If the serial input data is a logic one (not a frame sync pattern), counter 102 is reloaded to its initial value of 07. If the serial input data is a logic zero, counter 102 is incremented by one. The eighth consecutive zero sampled increments counter 102 to 15 which forces CRY to a logic one. The signal CRY triggers the frame sync

indicator circuit 103 signaling that a frame sync pattern has been detected. (2nd paragraph of column 3).

Here, in accordance with Kem, "eighth consecutive zero" corresponds to "sync".

When a person skilled in the art tries to combine Ng and Kem, "eighth consecutive zero" (second waveform, Logic '0') corresponds to "sync" (third waveform, Logic 'SYN'). In other words, by introducing Ng and Kem, the third waveform is replaced by a series of second waveforms, that is, "SYN" of Ng is expressed by a series of second waveforms without using the third waveform. The Examiner states that Ng and Kem are combined because of a suggestion of Muirhead. However, such a combination of Ng and Kem does not suggest or mention a series of second waveforms being replaced by the third waveform.

It should be noted that in the present application, "a third waveform which corresponds to m (m is a natural number equal to or greater than 2) codes that are the same as the codes of the second waveform." Therefore, a series of second waveforms is replaced by the third waveform. A combination of Ng and Kem achieves an opposite replacement as compared to the present application. Thus, the combination of Ng and Kem teaches away from Applicant's claimed invention. Hence, Applicant maintains that the present application is not obvious from the relied upon references.

Furthermore, the third waveform in Applicant's claimed invention has a unique configuration that makes it easy to generate a clock signal in synch with the data by detecting the rising transition. The significance of Applicants' unique third waveform is explained in the specification and will be briefly summarized below.

First, as described in the specification, it is generally known that it is preferable to obtain 50% duty ratio of data symbols. But this may not always occur in practice. If the

duty ratio of one of the data symbols is not 50%, it is possible for the average value (reference value) of DC components of received data to drift away from a certain fixed value (generation of DC offset) as the data sequence is received. Signal detection is based on detecting of respective high and low levels relative to the reference value. Thus, if the reference value should drift, proper detection may fail. Unfortunately, with conventional technology, this undesirable condition will naturally occur if the same signal is continuously received for a long time such that a large DC offset is generated. Such a large DC offset results in detection error, particularly if the level of the received signal suddenly changes.

Applicants' invention solves this problem by maintaining a 50% duty cycle ratio in all three waveforms, and by employing the third waveform, which greatly simplifies the generation of a clock signal from the received waveforms.

Regarding clock generation in Applicants' system: by detecting rises of the waveforms, it is possible to generate a clock signal, which synchronizes with the data without providing a complex mechanism. To illustrate by way of example, assume the first waveform corresponds to Logical "0", and the second waveform corresponds to Logical "1". In such a case, the third waveform corresponds to successive m codes of Logical "1".

With regard to the first and second waveforms, the first waveform corresponds to a single Logical "0", the second waveform corresponds to a single Logical "1", and each of the first and second waveforms has only one rise. Therefore, it is clear that a rise of the first or second waveform should synchronize with Logical "0" or Logical "1".

On the other hand, the third waveform which corresponds to successive m codes of Logical "1" includes m rises. Therefore, it is possible to recognize that each of m rises of the third waveform should correspond to Logical "1". As a result, it is possible to recognize that all of the rises of the waveforms correspond to Logical "0"/"1". In such a case, each of the rises corresponds to Logical "0" or Logic "1", and, by simply detecting rises, it is possible to generate the clock signal which synchronizes with the data. Hence, Applicant's claimed third waveform has a unique configuration that would not have been obvious from the teachings of the relied upon references.

Lastly, Applicant would like to thank the Examiner for the courtesies extended to Applicant's representative during a telephone interview on May 20, 2009. During the interview, the Examiner indicated that Muirhead is relied upon to teach different coding schemes may be used in RFID. The Examiner conceded that Applicant's coding scheme as recited in the pending claims was not explicitly disclosed by any of the cited references but would be a matter of design choice for one skilled in the art given the teachings of these references. In a similar manner, the Office Action states it would have been obvious to "modify the third waveform of NG ... as specified in claim by one's design preference for representation in signal waveform coding". We respectfully disagree with the Examiner's contention. Rejections of obviousness cannot be sustained by mere conclusory statements; instead, there must be some articulated reasoning with some underpinning to support the legal conclusion of obviousness. *KSR International Co. v. Teleflex Inc.* 82 USPQ2d 1385, 1395 (2007). In this case, the Examiner's conclusory statements do not establish a prima facie case of obviousness.

Accordingly, Applicant respectfully requests the Examiner reconsider and withdraw this rejection.

CONCLUSION

It is believed that all of the stated grounds of rejection have been properly traversed, accommodated, or rendered moot. Applicant therefore respectfully requests that the Examiner reconsider and withdraw all presently outstanding rejections. It is believed that a full and complete response has been made to the outstanding Office Action and the present application is in condition for allowance. Thus, prompt and favorable consideration of this amendment is respectfully requested.

If the Examiner believes that personal communication will expedite prosecution of this application, the Examiner is invited to telephone the undersigned at (248) 641-1600.

Respectfully submitted,

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